

# PATENT ABSTRACTS OF JAPAN

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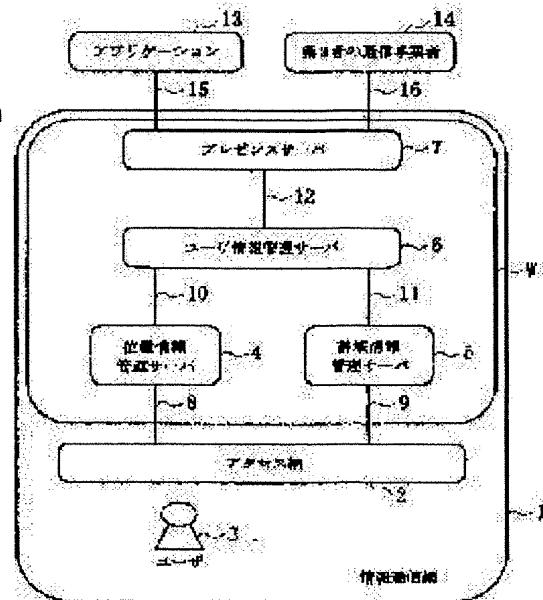
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## (54) PRESENCE SERVER DEVICE, PRESENCE INFORMATION REPORTING METHOD USING THE SAME, AND PRESENCE INFORMATION REPORTING SYSTEM

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To suppress the intra-network signal volume in an information communication network which is generated by presence information update requests from an access network and to provide the latest presence information of a user which the information communication network manages, after converting the latest presence information so that it can be used by applications provided by the information communication network or communication enterprisers of the third persons who don't possess information communication networks.

**SOLUTION:** Presence information can be provided for an application 13 provided by an information communication network 1 or a communication enterpriser 14 of the third persons who don't possess information communication networks by a presence server 7 constituted so as to have a function for managing initial information related to the user, which consists of existence access network information of the user, a user identifier capable of unequivocally identifying the user in the information communication network, and SLA information for which the user has contracted with respect to the information communication network, as a presence information initial value.



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## CLAIMS

### [Claim(s)]

[Claim 1] The same user moves in the inside of the information communication network which offers the access network of wireless or a cable using a terminal. It is presence server equipment in communication system accessible to said information communication network. The initial information about the user who consists of SLA information the identifiable user-identification child and the user have contracted [ information ] the contract with a meaning to said information communication network in a user is managed as presence information initial value with said user's \*\* area access network information, and said information communication network. Presence server equipment characterized by enabling offer of presence information also to the communication link entrepreneur of the third person who does not own the application or the information communication network which said information communication network offers.

[Claim 2] As said presence information initial value, a user is added to the initial information about the user who consists of SLA information the identifiable user-identification child and the user have contracted [ information ] the contract with a meaning to said information communication network with said user's \*\* area access network information, and said information communication network. Presence server equipment according to claim 1 characterized by a user managing the contract band information included in the \*\* area access network information which carries out a \*\* area, and said SLA information as presence information initial value.

[Claim 3] The same user moves in the inside of the information communication network which offers the access network of the wireless or the cable using presence server equipment according to claim 1 using a terminal. It is a notice system of presence information in communication system accessible to said information communication network. The positional information management equipment which has the function to manage a user's \*\* area access network information, without being dependent on the access network of the wireless or the cable which said information communication network uses, The function to change a user into a uniquely identifiable user-identification child, and to manage an usable user-identification child with said information communication network only with said access network in case a user accesses said information communication network from the access network of said wireless or a cable, The function to change and manage an usable information element uniquely with said information communication network only with said access network at an identifiable information element, It has the User Information management equipment which has the function to manage the SLA information with which the user has made the contract to said information

communication network, and said presence server equipment. Said positional information management equipment It has a means to perform a registration demand of a user's \*\* area access network information, to said User Information management equipment. Said User Information management equipment Said \*\* area access network information that the registration demand was performed from said positional information management equipment, It has a means to give a registration demand to said presence server equipment by making into presence information initial value a user's contract band information included in said SLA information. Said presence server equipment Said presence information initial value transmitted from said User Information management equipment is received. It has a means to notify the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers. The notice system of presence information characterized by exhibiting a user's presence information initial value to the communication link entrepreneur of the third person for whom the information communication link entrepreneur who owns an information communication network does not own the application or the information communication network which said information communication network offers.

[Claim 4] The same user moves in the inside of the information communication network which offers the access network of the wireless or the cable using presence server equipment according to claim 2 using a terminal. It is a notice system of presence information in communication system accessible to said information communication network. The positional information management equipment which has the function in which a user manages the access network information under current access and a user's \*\* area positional information, without being dependent on the access network of the wireless or the cable which said information communication network uses, and a user with the access network under current access The band management equipment which manages band value information with an available access network while the current user who subtracted the band value which other users have secured from the hold band value of an access network is accessing, The function to change a user into a uniquely identifiable user-identification child, and to manage an usable user-identification child with said information communication network only with said access network in case a user accesses said information communication network from the access network of said wireless or a cable, The function to change and manage an usable information element uniquely with said information communication network only with said access network at an identifiable information element, It has the User Information management equipment which has the function to manage the SLA information with which the user has made the contract to said information communication network, and said presence server equipment. Said positional information management equipment It has a means to perform a registration demand of a user's \*\* area positional information, to said User Information management equipment. Said band information management equipment A user has a means by which the access network under current access performs a registration demand of band information with an available current user, to said User Information management equipment. Said presence server equipment A means to receive an acquisition demand of the newest presence information from the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers, and to transmit this demand to said User Information management equipment, It has a means to notify the communication link entrepreneur of the third person who does not own the application or the information communication network with which an information communication network offers

said newest presence information acquired from said User Information management equipment. Said user positional information to which, as for said User Information management equipment, the registration demand was given from said positional information management equipment, A means to manage the available band information to which the registration demand was given from said band information management equipment as information about a user, respectively, The communication link entrepreneur of the third person who does not own the information about said user who manages with User Information management equipment, and the application or the information communication network which an information communication network offers The information about said user who satisfies the conditions which perform an acquisition demand is selected. Said positional information management equipment It has a means to acquire from said band information management equipment. The notice system of presence information characterized by notifying the newest information about the user who satisfies the conditions to which the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers gives an information acquisition demand.

[Claim 5] Said User Information management equipment The information about said user positional information which the communication link entrepreneur of the third person who does not own the application or the information communication network which said information communication network offers demands, band information with said available user, said user-identification child, and the user that consists of said SLA information Only the information whose recognition owns the application or the information communication network which User Information management equipment and an information communication network offer from the description language described by this demand, and is attained among a third person's communication link entrepreneurs is selected. The notice approach of presence information characterized by acquiring from said User Information management equipment.

[Claim 6] The notice approach of presence information according to claim 5 characterized by the communication link entrepreneur of the third person who does not own the application or the information communication network with which said information communication network offers the identifier and information element usable only within said information communication network in the information about the user who acquired from said User Information management equipment changing into usable information to said presence server equipment.

[Claim 7] The notice approach of presence information according to claim 5 characterized by to compute the present available band value of the user who satisfies service conditions of contract by matching the contract band information included in the SLA information for every user which said User Information management equipment manages, and the available band value of an access network while the user who notifies from said band information-management equipment to said User Information management equipment is accessing.

[Claim 8] The program for making a computer perform the notice approach of presence information given in any 1 term of claims 5-7.

[Claim 9] The record medium which recorded the program according to claim 8 and in which reading [ computer ] is possible.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** This invention relates to information communication networks with which an information communication network entrepreneur offers the access network of two or more cables or wireless broadly User Information management equipment the newest presence information of the user who moves to a meaning using the user-identification child who can identify a user It is related with the notice system of presence information at the notice approach list of presence information using the presence server equipment and this whose offer is enabled as presence information also to the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers.

**[0002]**

**[Description of the Prior Art]** In a Prior art, the presence information registered into presence server equipment Whenever at least one information on the information included in the presence information of the user who accesses an access network is updated Without changing the information which presence information registration is performed from an access network side to said presence server equipment, and is offered from an access network as presence information It is the method offered to the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers.

**[0003]**

**[Problem(s) to be Solved by the Invention]** If it is the registration method of the presence information on a Prior art when it is assumed that a user's \*\* area positional information or a user registers with presence server equipment by making available band information into presence information for every user with the access network which carries out a \*\* area When a communication link is performed after [ after registering presence information into presence server equipment ] fixed time amount progress, by renewal of the \*\* area positional information by migration of a user, or fluctuation of the communication link traffic volume within an information communication network The available band may also be changed and there is a problem which the mismatch of the newest presence information and the presence information registered into presence server equipment produces in that case.

**[0004]** Although it is necessary to notify to said presence server equipment for every renewal of presence information of a user in order to solve such a problem About the presence information of the user who moves broadly between the same access networks or between different-

species access networks Since possibility that renewal of positional information will be performed frequently is high, and the communication link traffic volume in an information communication network always is not fixed, either and a change of available band information is also made frequently, By the conventional method of updating to the newest presence information, the presence information on presence server equipment always High signal-processing capacity will be required from each equipment, such as said User Information management equipment in an information communication network, and said presence server equipment, for renewal demand signal processing of presence information to update.

[0005] Moreover, when it uses as presence information, without changing the information offered from the access network of the conventional method, since the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers cannot recognize an identifier or an information element usable only on a cable access network or a wireless access network, it is necessary for the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers to change into usable information.

[0006] The place which this invention is made in view of the above situations, and is made into the purpose While solving the above problems in a Prior art, controlling the amount of within-the-net signals in the information communication network generated for the renewal demand of presence information from an access network and reducing the signal-processing loads to each equipment of an information communication network A user's newest presence information which an information communication network manages It is in the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers providing with the notice system of presence information the notice approach list of presence information using the presence server equipment and this whose conversion to usable information was enabled.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the presence server equipment concerning this invention The same user moves in the inside of the information communication network which offers the access network of wireless or a cable using a terminal. It is presence server equipment in communication system accessible to said information communication network. A uniquely identifiable user-identification child and a user receive said information communication network in a user with said user's \*\* area access network information, and said information communication network. The initial information about the user who consists of SLA (Service Level Agreement) information which has made the contract is managed as presence information initial value. It is characterized by enabling offer of presence information also to the communication link entrepreneur of the third person who does not own the application or the information communication network which said information communication network offers.

[0008] Moreover, the presence server equipment concerning this invention is characterized by to manage the contract band information included in the access network information and the SLA information that said user does the \*\* area of the user as said presence information initial value with said user's \*\* area access network information, and said information communication network in addition to the SLA information the identifiable user-identification child and the user have contracted [ information ] the contract with a meaning to said information communication network as presence information initial value.

[0009] In the notice system of presence information concerning this invention, it is the description that the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers as an approach of reducing the signal-processing loads to each equipment of an information communication network adopted anew the method which is made updating the user presence information manage with presence server equipment when an acquisition demand of a specific user's newest presence information is perform. Moreover, it is the description to have adopted the method which selects only required information and is changed as presence information with User Information management equipment as an approach of changing a user's newest presence information which an information communication network manages into information with usable information carrier or application of the third person who does not own an information communication network.

[0010] For this reason, before an acquisition demand of a specific user's newest presence information is performed, in the notice system of presence information concerning this invention, available band information acquires in the following procedures for every user with the access network in which a user does a \*\* area to a user's \*\* area positional information included in the presence information which presence server equipment releases to the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers.

[0011] That is, first, a user's present access network information which an access network notifies to a positional information management server when a user accesses an access network is used for a user's \*\* area positional information as positional information of presence information, and the contract band information included in the SLA information for every user managed with User Information management equipment is used for a user's available band information as band information on presence information initial value.

[0012] Therefore, access information and a service contract use band value are exhibited at the time before the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers gives an acquisition demand of a specific user's newest presence information to presence server equipment as presence information initial value. When information communication link entrepreneur or application of the third person who does not own an information communication network performs an acquisition demand of a specific user's newest presence information from this presence information initial value, User Information management equipment acquires a user's newest detail presence information from each equipment in an information communication network anew.

[0013] By this, even when using the information of a user's \*\* area positional information and available band information to which updating is carried out frequently as presence information, like before Whenever a user's renewal of presence information is performed, in order not to update presence information to said presence server equipment, After becoming possible to control the amount of within-the-net signals in the information communication network generated for the renewal demand of presence information and reducing the signal-processing loads to each equipment of an information communication network, it becomes possible to acquire a specific user's newest presence information.

[0014] moreover, the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers in this method from the information included in an acquisition demand of a

specific user's newest presence information By selecting the presence information needed, in order that User Information management equipment may not acquire the information which does not have the need as presence information from each equipment, it becomes possible to control an information-requirements signal, and the signal-processing unloading in much more information communication network becomes realizable.

[0015] In this method, User Information management equipment furthermore, the identifier which shows usable positional information only within an information communication network The contract band value included in the SLA information for every user which the communication link entrepreneur of the third person who does not own the application or the information communication network which an information communication network offers changes into usable information, and said User Information management equipment manages, By computing the current available band value of the user who satisfies service conditions of contract by matching the available band value of an access network while the user who notifies from said band information management equipment to said User Information management equipment is accessing As compared with the case where presence information initial value is used for presence information, the newest detailed presence information becomes acquirable.

[0016]

[Embodiment of the Invention] Hereafter, it explains to a detail based on the suitable example which shows the gestalt of operation of this invention to a drawing.

[0017] Drawing 1 is the outline block diagram of the communication system containing the notice system W of presence information concerning one example of this invention. The system shown in drawing 1 is equipped with the presence server 7 which releases the information about the User Information management equipment 6 and the user who manage the positional information management server 4 which manages this user's \*\*\*\*\* information for the user 3 who moves the access network 2 broadly into the information communication network 1, the band information management server 5 which manages a user's available band information, and a user's subscriber information as presence information. In addition, the communication line to which 8 connects the access network 2 and the positional information management server 4, The communication line to which 9 connects the access network 2 and the band information management server 5, the communication line to which 10 connects the positional information management server 4 and the User Information management server 6, The communication line to which 11 connects the band information management server 5 and the User Information management server 6, The communication line to which 12 connects the User Information management server 6 and the presence server 7, The application with which an information communication network offers 13, the communication link entrepreneur of the third person for whom 14 does not own the information communication network, and 15 are communication lines which connect the communication link entrepreneur 14 of the third person who does not own the presence server 7 and the information communication network.

[0018] The positional information management server 4 is what has the function to manage a user's \*\* area access network information, without being dependent on the access network of the wireless or the cable which the information communication network 1 uses here. The user of the band information management server 5 is an access network under current access. An access network while the current user who subtracted the band value which other users have secured from the upper limit of the band which can hold an access network is accessing is what has the function to manage available band value information. In case a user accesses said information communication network from the access network of said wireless or a cable, User

Information management equipment 6 The function to change a user into a uniquely identifiable user-identification child, and to manage an usable user-identification child with said information communication network only with said access network, It is equipment which has the function to change an usable information element at an identifiable information element, and to manage it uniquely with said information communication network only with said access network, and the function to manage the SLA information with which the user has made the contract to said information communication network and which manages a user's subscriber information.

[0019] Moreover, the presence server 7 has the function to manage the initial information concerning a user in the contract band information included in the SLA information the identifiable user-identification child and the user have contracted [ information ] the contract with a meaning to said information communication network, in addition SLA information in a user as presence information initial value with a user's \*\* area access network information and said information communication network. In addition, fundamentally, the notice system W of presence information concerning this operation gestalt consists of the positional information management server 4, a band information management server 5, User Information management equipment 6, and a presence server 7. In addition, the band information management server 5 is unnecessary in presence information registration actuation.

[0020] [Presence information registration procedure] Drawing 2 is a procedure Fig. in this operation gestalt which registers a user's \*\* area positional information into a presence server. Hereafter, based on drawing 1 and drawing 2, the procedure of registering a user's \*\* area positional information into a presence server is explained. If a user 3 connects with the access network 2, the access network 2 will notify the current \*\* area positional information L of the user-identification child AN depending on the access network 2, and a user (example: a cellular-phone network, a PHS network, ADSL network, etc.) to the positional information management server 4 (R1). The information communication network 1 changes the user-identification child AN depending on the access network 2 into the uniquely identifiable user-identification child N to the User Information management server 6, and the positional information management server 4 transmits a registration demand of the access network information L of this user-identification child N and a user (R2).

[0021] While the User Information management server 6 registers the \*\* area positional information L of the user-identification child N who received from the positional information management server 4, and a user Based on the user-identification child N, a user's service contract information S is retrieved from the correspondence relation table of the subscriber profile which the User Information management server 6 manages for every user. A user's contract band value B is acquired (example: Gold service, Silver service, etc.), this use band value B and the \*\* area access network information L of said user-identification child N and said user are used, and the presence information P is created (R3).

[0022] About the created presence information P, a registration demand is transmitted from the User Information management server 6 to the presence server 7 (R4), and the presence information initial value P is registered into the presence server 7, and the presence information registration time of day TR is recorded (R5). After presence information registration is performed, a presence information registration response is transmitted to the User Information management server 6 (R6), and, finally a presence information registration response is transmitted to the positional information management server 4 from the User Information management server 6 (R7).

[0023] The contents of the presence information initial value P created by the information which

the User Information management server 6 manages to drawing 3 , and drawing 4 by above-mentioned R3 are shown, respectively. The User Information management server 6 holds the contract band value B of the user who searched from the \*\* area positional information L of the user-identification child N and a user, and a user's service contract information S, and creates the presence information initial value P based on such information as shown in drawing 3 and drawing 4 .

[0024] The typical scenario is as follows.

1. The communication link entrepreneur of the application or the third person whom the information communication network 1 offers accesses the presence server 7, and acquires a user's conditions of contract.

2 .. next, the presence server 7 is accessed again and a user's newest positional information and newest available band are acquired.

If attached to 1., if an conditions-of-contract acquisition demand is received, from the user-identification child whom the demand contains, the presence server 7 will retrieve the user's service contract information, and will transmit to the contents demand-origin.

It is as follows if attached to 2.

[0025] The [newest presence information acquisition procedure] Drawing 5 is a procedure Fig. where the communication link entrepreneur of the application or the third person whom the information communication network 1 in this operation gestalt offers acquires the newest presence information. Hereafter, based on drawing 1 and drawing 5 , the communication link entrepreneur of the application or the third person whom the information communication network 1 offers explains the procedure which acquires the newest presence information.

[0026] If the communication link entrepreneur of the third person who does not own the application or the information communication network which the information communication network 1 offers transmits an income demand of the specific user's US newest presence information to the presence server 7 (C1), the presence server 7 will transmit the renewal demand of presence information to the User Information management server 6 (C2). The User Information management server 6 performs a positional information acquisition demand of the specific user's US \*\*\*\*\* area positional information LN to the positional information management server 4 (C3). A conversion table with the \*\*\*\*\* area positional information which a specific user's user-identification child NUS and positional information management server 4 manage is searched. The specific user's US \*\*\*\*\* area positional information LN (example: the Tokyo Shinjuku area of a cellular-phone network) is acquired (C4), and the \*\*\*\*\* area positional information LN is transmitted to User Information management equipment 6 (C5). Based on this, the User Information management server 6 updates a user's newest positional information (C6).

[0027] Then, a band information acquisition demand is performed to the band information management server 5 (C7). The band information management server 5 searches and calculates the conversion table of the location and the current available band of the access network 2 which the band information management server 5 manages, and acquires the available band AB (example: the remaining available band of the Tokyo Shinjuku area of a cellular-phone network 2.4Gbps) from the user-identification child NUS of the \*\*\*\*\* area positional information LN and the specific user US (C8). The band information management server 5 transmits the available band AB to the User Information management server 6 (C9), and the User Information management server 6 records the available band AB in a user's newest positional information (C10). The contract band value B is searched from the specific user's US service contract

information SUS that User Information management server 6 self possesses, and the band NB which can be used by the specific user US from AB and B is computed (C10). (example: a Gold Service user has the value equivalent to NB which carried out the multiplication of the 0.1 2.4Gbps% of the remaining available band of the Tokyo Shinjuku area, when it is described by conditions of contract that the remaining band is usable 0.1%)

[0028] The information which the User Information management server manages in the newest presence information acquisition procedure in this operation gestalt to drawing 6 is shown. The User Information management server 6 holds the band NB which can be used by the contract band value B of the user who searched from the \*\*\*\*\* area positional information LN of the general-purpose user-identification child NUS and a user, and a user's service contract information S, the available band AB in a user's \*\*\*\*\* area location, and the specific user US as shown in drawing 6.

[0029] The User Information management server 6 creates the newest presence information PN combining the band NB which can be used by the specific user's US above-mentioned user-identification child NUS, the \*\*\*\*\* area positional information NB, and the specific user US (C11). A presence information registration demand of the newest presence information PN is given to the presence server 7 (C12). The communication link entrepreneur of the third person who does not own the application or the information communication network which (C13) and an information communication network offer by the newest presence information PN being registered into the presence server 7 becomes possible [ acquiring the newest presence information PN ]. Then, the presence server 7 transmits a presence information registration response to the User Information management server 6 (C14), and the User Information management server 6 transmits the renewal response of presence information to the presence server 7 (C15).

[0030] While according to the above-mentioned operation gestalt controlling the amount of within-the-net signals in the information communication network 1 generated for the renewal demand of presence information from the access network 2 and reducing the signal-processing loads to each equipment in the notice system W of presence information The effectiveness that the communication link entrepreneur of the third person who does not own the application or the information communication network with which the information communication network 1 offers a user's newest presence information which the information communication network 1 manages becomes convertible into usable information is acquired.

[0031] In addition, it is the range which the above-mentioned operation gestalt does not show an example of this invention, and this invention should not be limited to this, and does not deviate from the summary of this invention, and it cannot be overemphasized that proper modification and amelioration may be performed.

[0032] Moreover, as above-mentioned, an operation of the above-mentioned notice system W of presence information can realize this by the program control by the computer, and the right range of this invention also attains to the record medium which recorded the program or this program for the program control by such computer.

[0033]

[Effect of the Invention] As mentioned above, as explained to the detail, when using the information [ say / a user's \*\* area positional information or available band information ] to which updating is carried out frequently as presence information according to this invention, presence server equipment is received. Whenever a user's renewal of presence information was performed, in order not to update presence information, After being able to control the

information communication link generated for the renewal demand of presence information and reducing the signal-processing loads to each equipment in the notice system W of presence information especially in an information communication network. The remarkable effectiveness of becoming possible to acquire a specific user's newest presence information is done so.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

[Drawing 1] It is the outline block diagram of the communication system containing the notice system W of presence information concerning one example of this invention.

[Drawing 2] It is the explanatory view of the procedure of registering a user's \*\* area positional information into a presence server in this operation gestalt.

[Drawing 3] It is drawing showing the information which the User Information management server manages at the time of the presence information registration procedure in this operation gestalt.

[Drawing 4] It is drawing showing the presence information created with User Information management equipment at the time of the presence information registration procedure in this operation gestalt.

[Drawing 5] It is the explanatory view of a specific user's newest presence information acquisition procedure in this operation gestalt.

[Drawing 6] It is drawing in this operation gestalt showing the information which the User Information management server manages in the newest presence information acquisition procedure.

**[Description of Notations]**

W Notice system of presence information

1 Information Communication Network

2 Access Network

3 User

4 Positional Information Management Server

5 Band Information Management Server

6 User Information Management Server

7 Presence Server

8, 9, 10, 11, 12, 15, 16 Communication line

13 Application Which Information Communication Network Offers

14 Communication Link Entrepreneur of Third Person Who Does Not Own Information Communication Network

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[Translation done.]

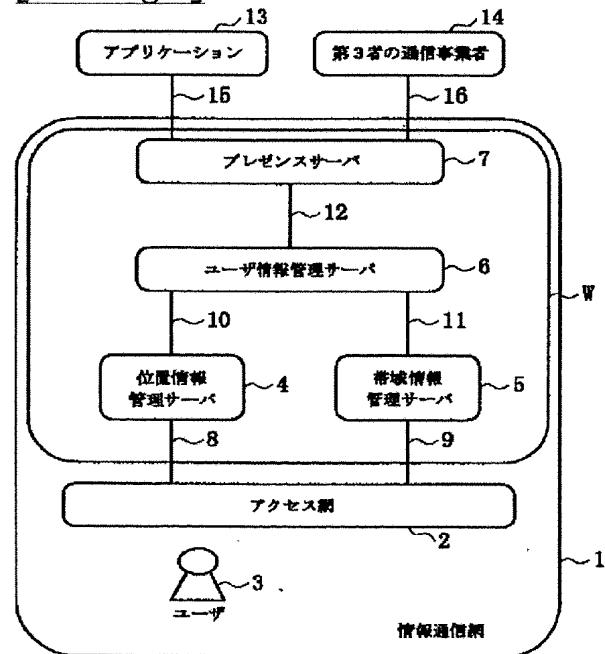
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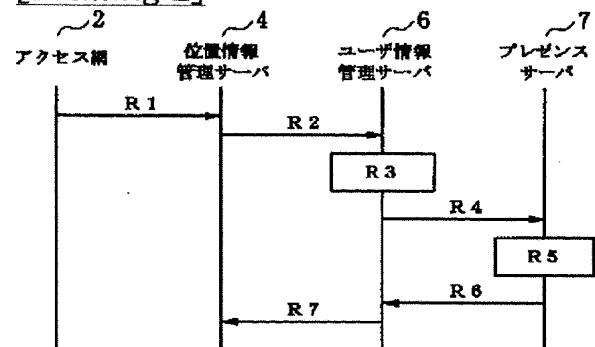
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## DRAWINGS

## [Drawing 1]



## [Drawing 2]



## [Drawing 3]

- ユーザ識別子 (N)
- サービス契約情報 (S)
  - ・契約帯域情報 (B)
- ユーザの在園位置情報 (L)

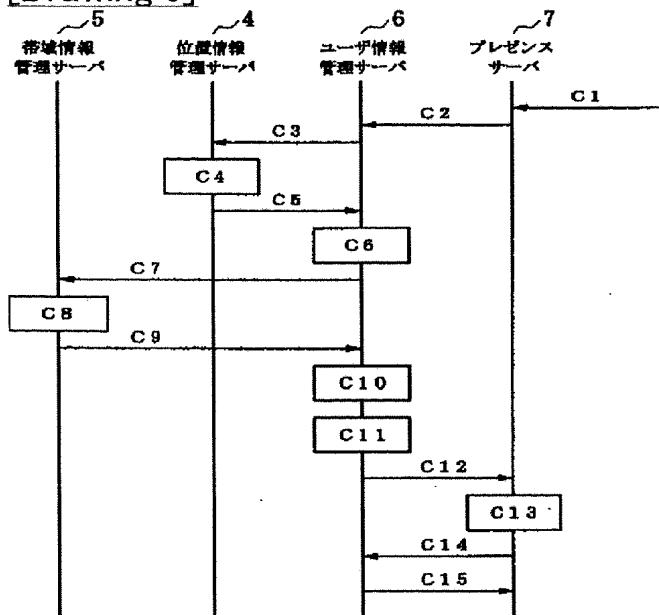
### [Drawing 4]

- ユーザ識別子 (N)
- 契約帯域情報 (B)
- ユーザの在園位置情報 (L)

### [Drawing 6]

- ユーザ識別子 (NUS)
- 最新在園位置情報 (LN)
- サービス契約情報 (SUS)
  - ・契約帯域情報 (B)
- 在園位置での情報通信網の利用可能帯域 (AB)
- 特定ユーザUSの利用可能帯域 (NB)

### [Drawing 5]



[Translation done.]